

## ABSTRACT

A blood viscosity measuring system and methods for measuring blood viscosity monitors the change in height of one of two, oppositely-moving, columns of blood from the circulating blood of a patient and, given the dimensions of a capillary tube through which the blood flows and by detecting a single blood position of the other oppositely-moving column, determines the blood viscosity over a range of shears, especially low shears. The system includes a tube set (disposable or non-disposable) that includes a pair of riser tubes, a capillary tube of predetermined dimensions that is coupled between the riser tubes (or that forms a portion of one riser tube) and a valve mechanism for controlling the circulating flow of blood from the patient into the riser tubes. A sensor monitors the movement of one of the columns of blood in one of the riser tubes and a single point detector detects a single blood position of the other column of blood and an associated microprocessor analyzes this movement and single point, along with the predetermined dimensions of the capillary tube, to determine the viscosity of the patient's circulating blood.